FE-15-98 **(document link)**

SUMMARY FOR FE-15-98: SELECTED AND POSSIBLE CONTRIBUTING FACTORS

SELECTED FACTORS

Railroad: Belt Railway Company of Chicago
Location: Bedford Park, Illinois
Region: Region 4

Month: May
Date: 05/26/98
Time: 7:33 a.m., CST

Data for Fatally Injured Employee(s)

Conductor
57 years old
36 years of service
Last rules training: November 1997
Last safety training: November 1997
Last physical: July 1995

Data for all Employees (Craft, Positions, Activity)

Craft: Transportation

Positions:

6:30 am Switch Crew
Engineer
Conductor
Helper

Yardmaster

Activity: Switching

SUMMARY FOR FE-15-98 CONTINUED

POSSIBLE CONTRIBUTING FACTORS

EVENT

A Conductor was struck by a 3-car cut and fatally injured during a switching operation.

PCF No. 1

The incident occurred when the Conductor failed to remain clear of moving equipment.

PCF No. 2

The crew failed to assure that standing cars were secured by setting hand brakes or blocking wheels before the Conductor attempted to adjust the coupler of another car while facing away from the 3-car cut. Consequently, he was struck from behind by the 3-car cut as it rolled toward him.

PCF No. 3

The crew did not comply with the railroad's safety rules which required that cars and engines be separated at least 50 feet and equipment be stopped before stepping between it. Based on data obtained during the re-enactment, investigators concluded that cars were separated about 20 feet prior to the incident.

REPORT:	FE-15-98	
RAILROAD:	Belt Railway Company of Chicago (BRC)	
LOCATION:	Bedford Park, Illinois	
DATE & TIME:	May 26, 1998, approx. 7:33 a.m. CST	
PROBABLE CAUSE:	The Conductor, who failed to remain clear of moving equipment, was struck by a 3-car cut and fatally injured during a switching operation.	
EMPLOYEE:	Occupation:	Conductor
	Age:	57 Years
	Length of Service:	36 Years
	Last Rules Training:	Nov. 13, 1997
	Last Safety Training:	Nov. 13, 1997
	Last Physical Examination:	July 7, 1995

CIRCUMSTANCES PRIOR TO THE ACCIDENT

On the day of the accident, a yard crew went on duty at 6:30 a.m. at the East Yard Office, in the Belt Railway Company of Chicago's (BRC) Clearing Yard in Bedford Park, Illinois. Designated as the 6:30 a.m. Switch Crew, it comprised an Engineer, Conductor, and Helper. The switch crew was assigned locomotive BRC 525, a model SW1200 unit facing east. All of the crew members had completed their statutory, off-duty periods. The accident occurred in the East Classification Yard.

Clearing Yard was a double hump facility where hump operations were conducted in geographically east and west directions where hump operations could be conducted simultaneously. The East Yard consisted of a departure, receiving, and classification yard.

The East Classification Yard had 56 tracks. From the north, they were Tracks Nos. 23 to 0 and 31 to 63. There was no Track No. 49 or Tracks Nos. 24 to 30. Lead tracks at the end of the East Classification Yard provided access to these tracks. The west end of the East Classification Yard, the bowl area for the hump, descended from the west to the east.

The East Classification Yard was artificially lit on the west end by three light towers. On the east end, there was one light tower. The classification tracks near the east end of the yard had inert retarders. The track center where the accident occurred was 16 feet wide, as were most of the track centers in the East Classification Yard.

The first task assigned to the switch crew was to switch some incorrectly classified rehump cars from some tracks in the East Classification Yard. Next, the switch crew was instructed to couple cars on Tracks Nos. 41, 31, 33, and 0 together for an outbound train. After completing the switching of the rehumps, the crew began their next assignment of coupling cars on Tracks Nos. 41, 31, 33, and 0.

With the Conductor controlling the movements from the ground, work began on Track No. 41 where the switch crew coupled the cars and doubled to Track No. 31. When cars on Tracks Nos. 41 and 31 were coupled together, the Conductor instructed the Engineer to shove them westward into the clear.

The radio log transcript indicated that the Conductor had told the east Yardmaster that Track No. 41 was clear at 7:20 a.m., and at 7:22 a.m. had informed the crew that he was walking toward Track No. 31. At 7:22 a.m., the Helper told the Conductor that they were coming toward him on Track No. 31. The Conductor began controlling the movement by radio. The Conductor instructed the Engineer to shove the cars westward into the clear. Work was completed on Track No. 31 at about 7:28 a.m.

According to the radio log transcripts, the Conductor asked the east Yardmaster at 7:29 a.m. to let him know when Track No. 0 was out of service. At 7:29 a.m., the Conductor told the crew members that when they had shoved the cars in the clear on Track No. 31 to come to Track No. 0.

After the Engineer shoved in the clear on Track No. 31 and the locomotives were uncoupled from the cars, he proceeded to Track No. 0, stopping short of coupling to the cars. The Conductor asked the east Yardmaster about Track No. 33 and was informed that humping was still in progress. He then asked for Track No. 0. The Conductor was informed by the east Yardmaster there was one more car coming onto the track and as soon as it landed, Track No. 0 would be out of service. Hump records show that Track No. 0 was blocked at 7:28 a.m.

When the locomotive arrived, the Conductor informed them, "It looks like the [last] car [released onto Track 0] is dying; tie on and stretch." The Helper controlled the westward movement from the bottom switching step of the locomotive while making the coupling to the east car on Track No. 0. The Helper was riding on the southwest corner of the locomotive and saw the Conductor standing in the walkway on the south side of Track No. 0 adjacent to Track No. 31, about three cars west of the locomotive where he believed the first missed coupling would need to be made. After coupling to the cars and stretching them eastward about one half car length, the Conductor stopped the movement. At 7:33 a.m., the radio log transcript confirmed the Conductor telling the crew to tie on and stretch the cars. At 7:33 a.m., the Conductor said, "That will do." That was the last time the Engineer heard the Conductor on the radio. The last time the Engineer saw the Conductor was when they were making a coupling on Track No. 31 with the cars from Track No. 41.

Sunrise on the day of the accident was at 5:23 a.m. with partially cloudy skies, a slight wind, and a temperature of 8º F.

THE ACCIDENT

The Yardmaster needed to check on the progress, so he attempted to contact the Conductor on the radio and failed to do so after numerous attempts. After the Yardmaster's unsuccessful attempts, the Helper called for the Conductor on the radio numerous times, and after no response was received, started walking westward to locate the Conductor. The Helper walked westward in the walkway on the south side of Track No. 0 toward the location where he had last seen the Conductor standing when they had made the previous coupling.

Upon his arrival, the Helper found the Conductor coupled between the third and fourth cars on Track 0, west of the locomotive, and called for an ambulance. The Conductor was facing eastward, coupled about waist level, and after gasping, slumped forward over the drawbar of the eastward car.

The Bedford Park Fire and Police Departments were notified at 7:52 a.m. and responded to the accident scene immediately. Emergency personnel arriving on the scene found the Conductor's body coupled at the midriff between cars TTGX 962030 and TTGX 941112. The Conductor was slumping over the drawbar of the east car, TTGX 941112. The Conductor was pronounced dead at 8:15 a.m., and his body was transferred to the Cook County Medical Examiner's Office.

POST-ACCIDENT INVESTIGATION

Post-accident investigation of cars TTGX 962030 and TTGX 941112 was conducted by the FRA and BRC with no deficiencies noted which caused or contributed to the accident. The FRA and BRC also conducted a post-accident inspection of locomotive BRC 525, assigned to Switch Job 6:30 a.m., with no deficiencies noted.

FRA toxicological testing was performed on the Engineer and Helper of Switch Job 6:30 a.m. and the deceased Conductor. All tests were negative.

A track inspection was conducted on Track No. 0 with no deficiencies noted which contributed to or caused the accident. Track No. 0 was constructed of wood crossties, continuous welded rail, and various types of ballast.

Hump records show that car ACFX 98976, the westward car and last of the 14 cars humped onto Track No. 0, had cleared the crest at 7:26 a.m., clearing the group retarder, which was the last retarder that the car passed through at 7:27 a.m. Hump records show the speed of the car through the group retarder was 8.5 mph.

As shown by the track survey, the car had to travel a distance of 1,378.2 feet to reach the next westward car in the track. Traveling at 8.5 mph, the car would have traveled this distance in 110.6 seconds, arriving at the point of impact at 7:29 a.m. Radio log transcripts show the Conductor stating "That will do," at 7:33 a.m. The Helper's statement placed the Conductor standing in the walkway at the same time near the location where he felt the first missed coupling was located. In that case, ACFX 98976 would have been traveling at 2.78 mph.

Radio log transcripts indicate that at 7:33 a.m., the Conductor instructed the crew to tie on and stretch the cars and that he said, "It looks like that car is dying." If car ACFX 98976 had rolled 1,378.2 feet at 2.78 mph or less, it could have impacted the cars after the Conductor stopped the movement by the crew at 7:33 a.m. and stepped between the rails of Track No. 0. The momentum of the impact would have shoved the cars in an eastward movement as the Conductor was attempting to align the couplers.

Observations at the scene and data from the track survey indicate that the front truck of car TTGX 975086, the second eastward car from the locomotive, was resting in the inert retarder and would have been holding the 14 cars on Track No. 0 to prevent any further eastward movement.

Interviews with the Engineer and Conductor and radio log transcript revealed that the Conductor had asked the crew to couple and stretch the cars. The separation of the three easternmost cars from the rest of the 11 cars, without first setting hand brakes on the standing cars, had eliminated any method of keeping the cut of cars on Track No. 0 from rolling eastward.

While an eastward movement of the cars was being accomplished, the Conductor asked for the movement to be stopped. It appears he then stepped between the rails of Track No. 0 and while facing eastward, had attempted to adjust the west coupler of TTGX 94112. He was not able to see the movement of the westward cars, and was struck from behind and coupled up by the east coupler of TTGX 962030. Based on data obtained during a re-enactment, it appears the cars were separated about 20 feet.

APPLICABLE RULES

General Code of Operating Rules
Third Edition
Effective April 10, 1994

1.20 Be Alert to Train Movement (in part)

Employees must expect the movement of trains, engines, cars, or other moveable equipment at any time, on any track, and in either direction.

Employees must not stand on the track in front of an approaching engine, car, or other moving equipment.

7.4 Precaution for Coupling or Moving Cars or Engines (in part)

Before coupling to or moving cars or engines, verify that the cars or engines are properly secured and can be coupled and moved safely.

7.6 Securing Cars or Engines (in part)

Apply a sufficient number of hand brakes to prevent movement. If hand brakes are not adequate, block the wheels.

When cars are moved from any track, apply enough hand brakes to prevent any remaining cars from moving.

Belt Railway Company of Chicago
Safety Rules

106. Employees working or walking on or about the tracks must be alert, watchful and keep out of danger, exercising care to avoid injury to themselves and others.

187. When separating equipment for any reason, make sure you separate cars and engines at least fifty (50) feet and equipment is stopped before stepping between.